



# INSTRUCTION MANUAL

DigiCrown  
psu

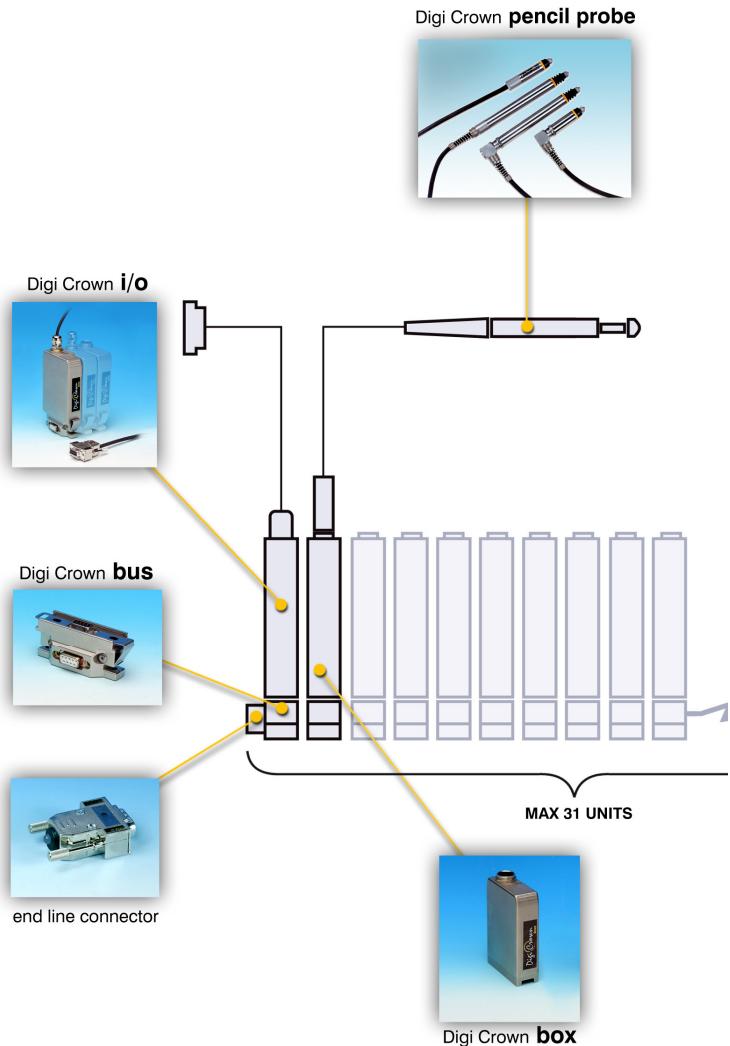
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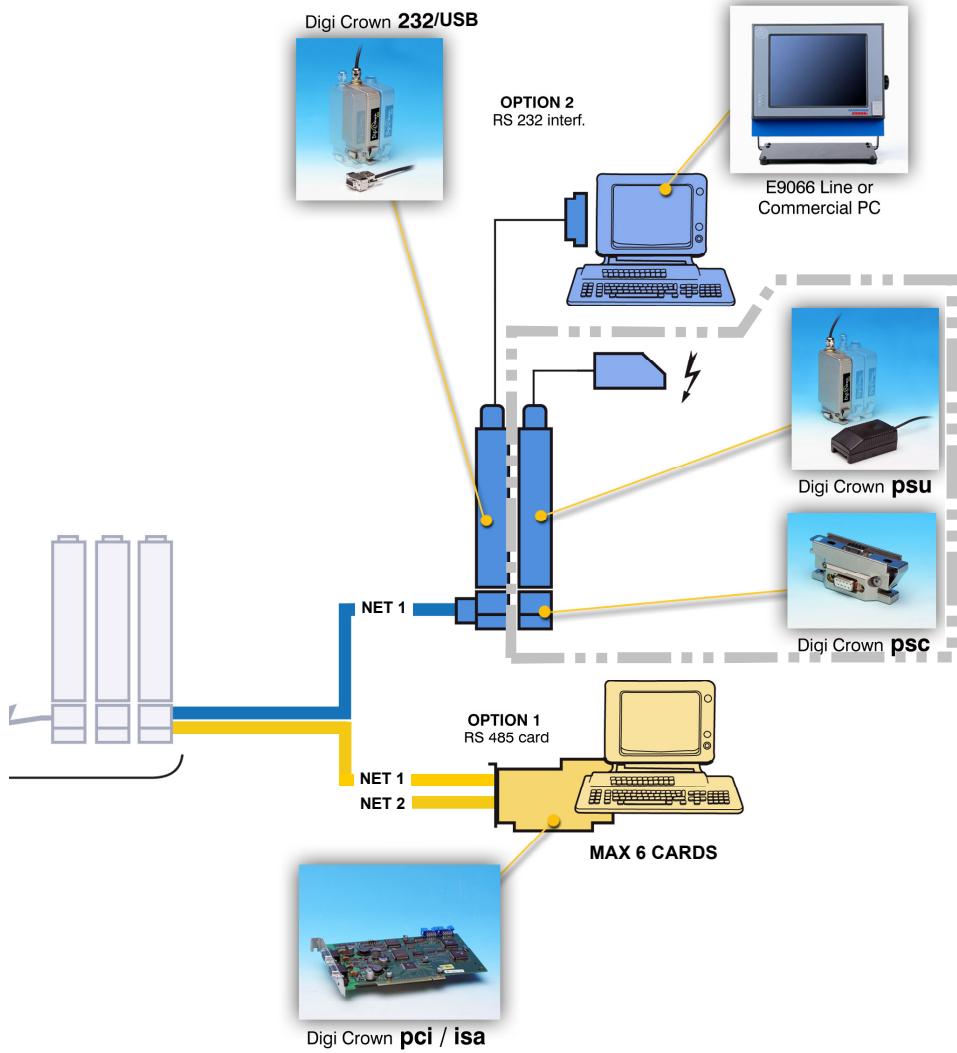


# 1. INTRODUCTION TO DIGICROWN PROBING LINE SYSTEM

The *DigiCrown* is a flexible measuring system (from 1 to 372 sensors), configured in networks (from 1 to 12) that can be connected to a PC via an RS232/USB serial interface or dedicated RS485 interface cards for PCI or ISA bus.

The diagram below shows the elements of the *DigiCrown* system in their possible configurations. This user manual follows up the installation of the *DigiCrown psu* unit.





## 2. NETWORK POWER SUPPLY UNIT



The *DigiCrown psu* unit (henceforth called **psu**) is formed of a stabilized power supply unit and an interface module to be connected to the network in the first module position. The **psu** unit supplies the required electric power, as reported on the Technical Specification (chapter 6).

The connection of the **psu** module to the network is made via the *DigiCrown psc* connector, whose structure is identical to that of the **bus** connector for *DigiCrown box* modules. The only variation is the polarity inversion of the Cannon 9-way sub D-type connector (Fig. 1) and the power supply interruption on the bus.



Fig. 1

## 2.1. Cases in which a *psu* module is required

This power supply unit is always required in the following cases:

- the network management is achieved with an RS-232 serial standard by means of a *DigiCrown 232/USB* module (Fig. 2);

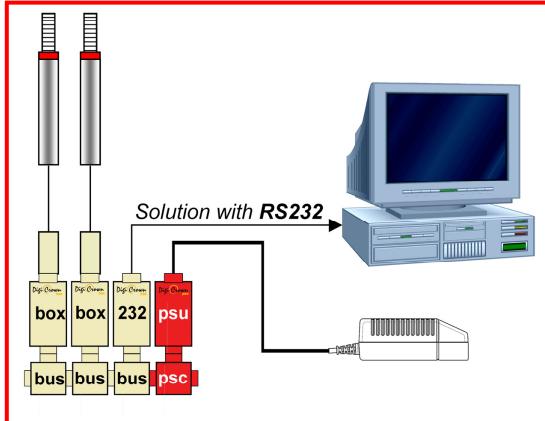


Fig. 2

- the power supply generated by the *DigiCrown PCI/ISA* modules (RS-485) is insufficient for a long cable: a **psu** module is installed in order to cope with the voltage drops (see example reported on Fig. 3).

When the network is connected to the computer via a *pci/isa* card, it is usually not necessary to install an additional power supply unit, unless there is the situation described in point B.

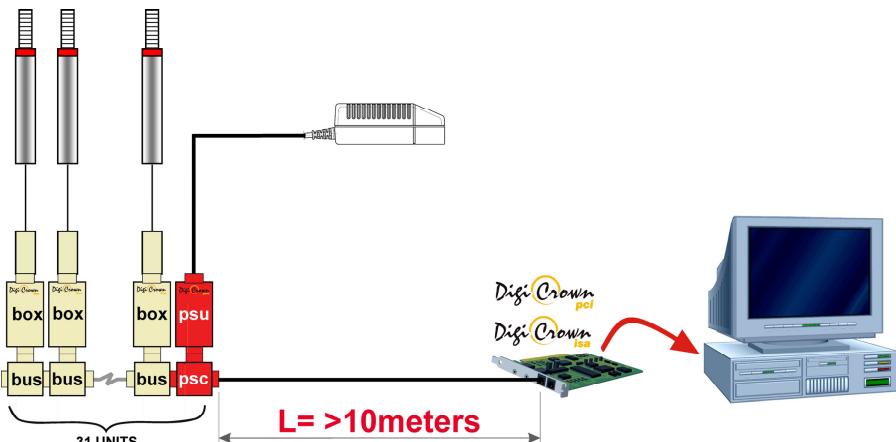


Fig. 3

### 3. END LINE CONNECTOR

The end line connector (Fig. 4) is inserted as a closing element in each NET, and physically applied to the last DigiCrown **bus** module.

The function of this device is to indicate, by means of its integrated LED, whether the network is supplied with power at a voltage sufficient to ensure the correct operation of all the modules that are present.

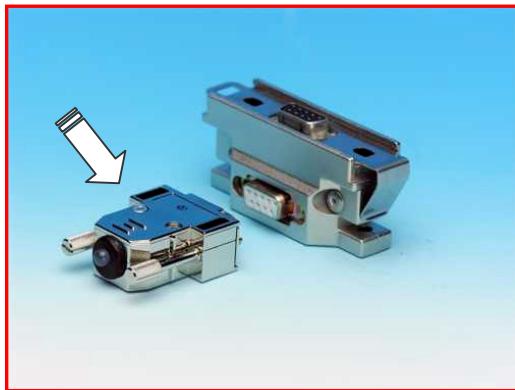


Fig. 4

There are three types of display in the network end connector:

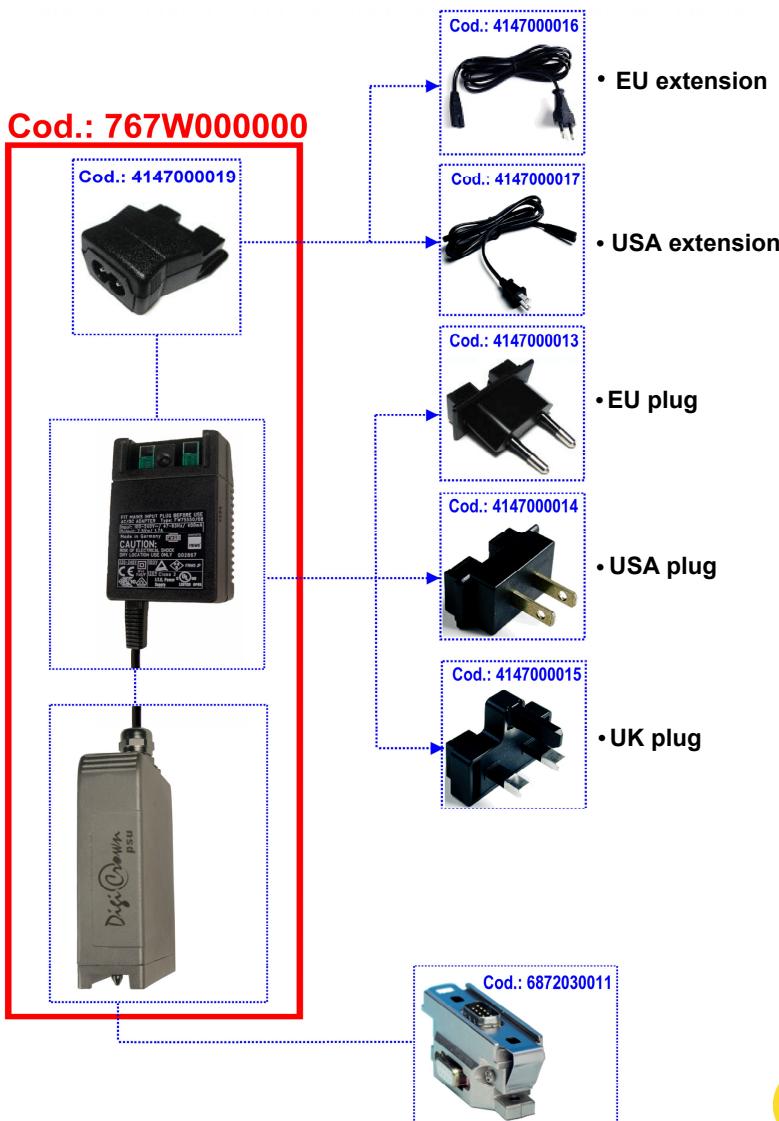
- LED OFF → voltage in bus insufficient
- LED ON (green light) → voltage OK
- LED FLASHING (red/green light) → communication in bus active

Should the voltage be insufficient to supply the network (point 1), it is necessary to install an auxiliary **psu** unit. Another solution may be for the user to remove some modules in sequence until the LED of the network end connector lights up, and to create an additional network (managed by means of a **232** interface or **pci/isa** card).

## 4. CONFIGURATION OF POWER SUPPLY UNIT (100-240VAC)

The ordering code **767W000000** identifies the network power supply unit that functions with a 100-240 VAC input voltage. This code includes several elements, but is not ready for use: it is necessary to order, as an accessory, the **psc** module (code 6872030011), and also the element for the connection to the local network (network cables and plugs complying with the standard adopted in the country where the equipment is used).

Below, the available configurations, with the relevant ordering codes, are shown.



## 5. CONFIGURATION OF POWER SUPPLY UNIT (24 VDC)

The ordering code **767W010000** identifies the network power supply unit that functions with a 24 VDC input voltage (machine voltage). The 24 VDC **psu** module is supplied with a 5m long electrical connection cable.

To complete the configuration of the 767W010000, it is necessary to order the **psc** module (code 6872030011).

**Cod.: 767W010000**



## 6. ELECTRICAL PROTECTION OF POWER SUPPLY UNIT

The power supply unit (Fig. 5) connected to the 100-240Vac **psu** module is equipped with the following protection systems:

- Protection against overload and short circuit: the circuit is equipped, in series, with a renewable fuse that is blown if there is an excessive current absorption.

As soon as these abnormal conditions disappear, an automatic system with which the **psu** module is equipped restores operating conditions without the need for any manual action.



Fig. 5

 ***The power supply must be installed in dry environments. The unit is specifically designed for indoor use only.***

## 7. GROUND CONNECTION

In this chapter are reported different technical solutions in order to make sure the *DigiCrown* system is properly grounded, according to the NET's configuration and to the lay-out of the different units.

**The purpose of ground connection is to minimize as much as possible the electrical noise and the interference, typically affecting the measurement signal.**

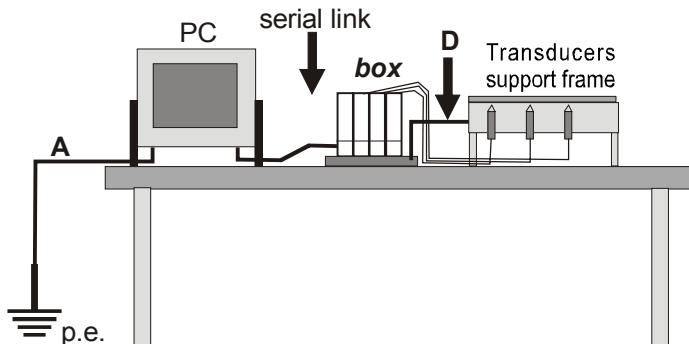
The ground connections schemes reported in this paragraph represent the optimal solution in order to have a system fully compatible with the EMC standards, according to the following directives:

- 73/23/EEC
- 2004/108/CE
- EN55022: 1998 (EMC)
- EN55024: 1998 (EMC)

If for a specific application the customer considers such technical solutions not required, Marposs is not responsible for any possible inaccurate working condition of the devices.

- **Bench application n. 1**

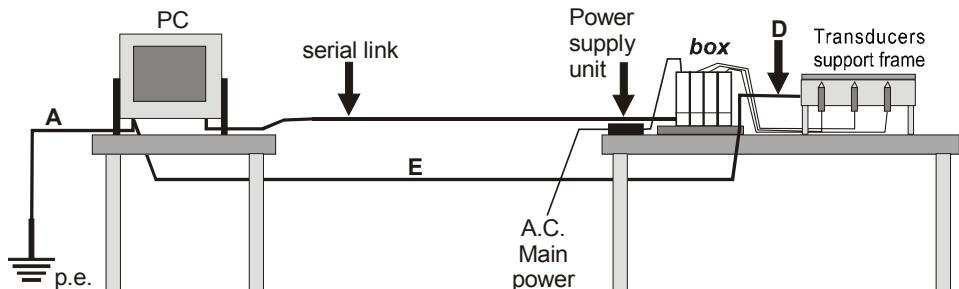
The whole *DigiCrown* system (control + measurement) has been placed on a single bench gauge.



The "D" equipotential connection between the *box* modules and the transducers support frame, can be done whether a metallic conductive frame is used. In the glass gauging applications the transducers support frame is usually not a conductive material and the transducers are typically insulated, in this case no ground connection is required.

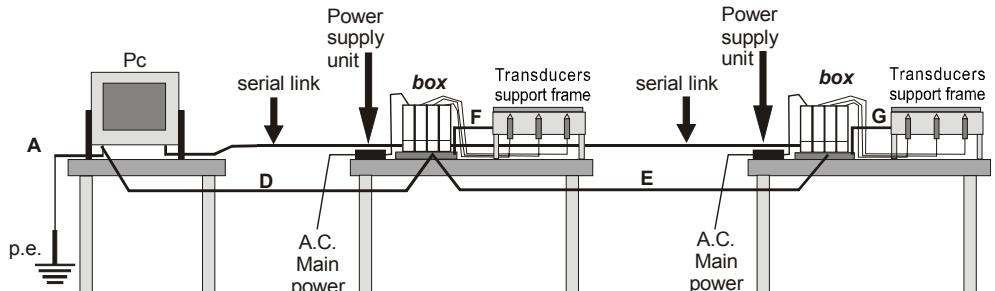
- **Bench application n. 2**

In case the control system (PC...) is placed on a bench while the transducers and the **box** modules on another, we suggest to set-up an equipotential link as shown in the points: **A + D + E**.



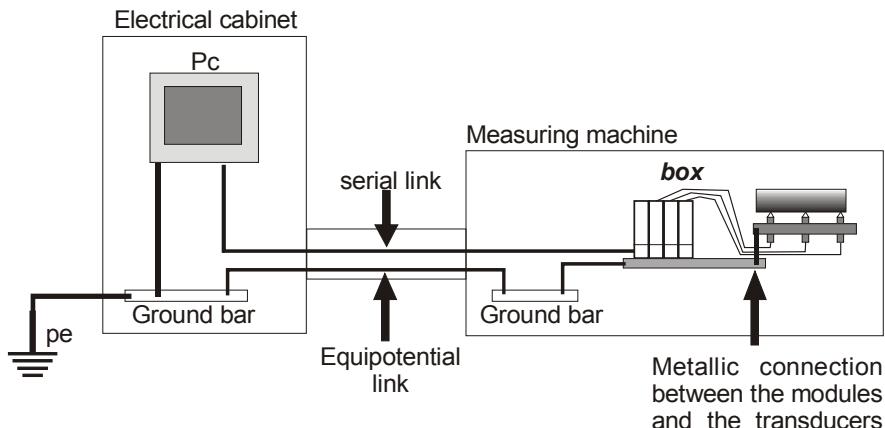
- **Bench application n. 3**

If the *DigiCrown* system is split on two or more benches, we suggest to set-up an equipotential link as shown in the points: **A + D + E + F + G**.



- **Automatic machine application**

For such applications it is strongly suggested to provide the **box** units and the transducers support frame with an equipotential link: in the automatic machine applications the eddy-currents normally flow in the transducer's shield.



## 8. TECHNICAL SPECIFICATIONS

### *DigiCrown psu* (100-240 VAC) / code **767W000000**

<b>Power supply</b> .....	100-240Vac / 47-63Hz / 400mA
<b>Output</b> .....	7,5Vdc / 1,7A
<b>Operating temperature</b> .....	0 to 40°C
<b>Storing temperature</b> .....	-20 to +70°C
<b>Protection degree</b> .....	IP 43 (on side of interface with bus)
<b>Protection against overload</b> .....	with automatic resetting
<b>Dimensions</b> .....	see Chapter 8

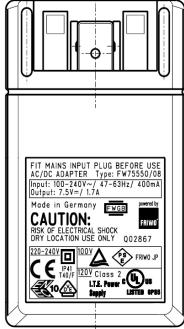
### *DigiCrown psu* (24 Vdc) / code **767W010000**

<b>Power supply</b> .....	24Vdc (-20% / + 20%)
<b>Output</b> .....	7,5Vdc / 1,8A
<b>Current absorption</b> .....	1A
<b>Operating temperature</b> .....	0 to 40°C
<b>Storing temperature</b> .....	-20 to +70°C
<b>Protection degree</b> .....	IP 43 (on side of interface with bus)
<b>Protection against overload</b> .....	with automatic resetting
<b>Protection against inversion</b> .....	with automatic resetting
<b>Dimensions</b> .....	see Chapter 8

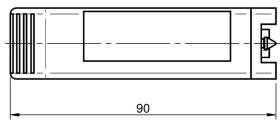
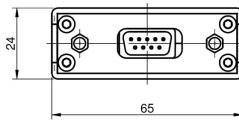
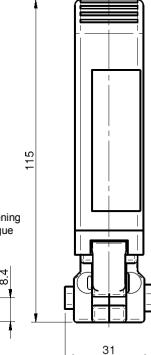
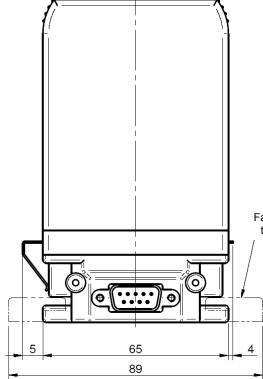
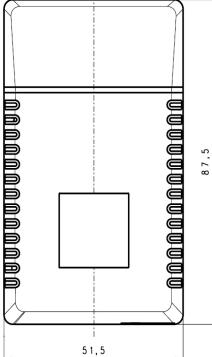
## 9. INSTALLATION DIAGRAMS

*DigiCrown psu module*

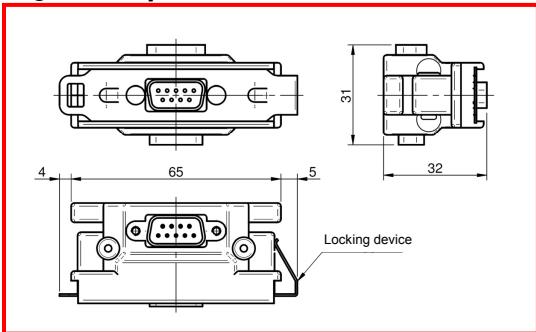
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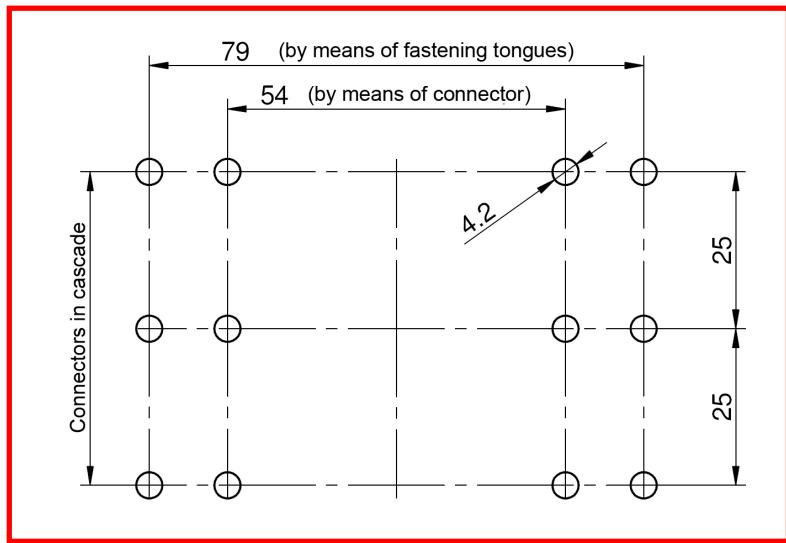
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## DigiCrown psc module



## Dimensions of fastening to stand



## 10. DECLARATION OF CONFORMITY

MARPOSS S.p.A. hereby declares that the devices described in this manual comply to the **CE** safety requirements and EMC electromagnetic compatibility requirements, in compliance with the following directives:

**73/23/EEC** of 02-19-1973 (LOW VOLTAGE directive)  
**2004/108/CE** of 01-20-2005 (EMC directive)

The devices have been designed, assembled and tested in compliance with the following European standards:

**EN60950 : 2000** (Safety)  
**EN61326 - 1 : 1997** (EMC)  
**EN61326/A1 : 1998** (EMC)

## 11. SUMMARY TABLES OF ORDERING CODES

The tables below are a general summary of the ordering codes for all the components of the DigiCrown Probing Line.

The highlighted parts are the elements described in this manual.

### INTERFACES

ORDER CODE	DESCRIPTION
767X000000	DIGI CROWN BOX
767X000200	DIGI CROWN BOX + RAM
767Y000000	DIGI CROWN 232
767Y010000	DIGI CROWN USB
767W000000	DIGI CROWN PSU (110-240Vac / 7,5Vdc)
767W010000	DIGI CROWN PSU (24Vdc / 7,5Vdc)
767I000000	DIGI CROWN I/O SINK
767I010000	DIGI CROWN I/O SOURCE
767I020000	DIGI CROWN I/O ONLY INPUT
6355321000	DIGI CROWN PCI
6355322000	DIGI CROWN ISA

### ACCESSORIES

ORDER CODE	DESCRIPTION
6355200000	END LINE CONNECTOR
6872030010	DIGI CROWN BUS
6872030011	DIGI CROWN PSC
4147000013	EU PLUG
4147000014	USA PLUG
4147000015	UK PLUG
4147000016	EU CABLE
4147000017	USA CABLE

### EXTENSIONS

ORDER CODE	DESCRIPTION
6738057016	CONNECTION CABLE 2m
6738057023	CONNECTION CABLE 10m
6738057022	CONNECTION CABLE 15m
6738057017	CONNECTION CABLE 25m

### SW packages

ORDER CODE	DESCRIPTION
CM2Z22MA00	QSPC
CM2F22MA02	EASY ACQUISITION
CM2A12MA01	MARPOSS DRIVER LIBRARY



The product and any part that can be mechanically separated from it must not be disposed of the environment and must not be disposed of as municipal or general waste (Law for national adoption of European directives 2002/95/EC and 2002/96/EC and others). The provisions of the law only apply to products identified as WEEE (waste electrical and electronic equipment) marked with the appropriate symbol and in any case put on the market after 13 August 2005. Once put out of use, the WEEE product may contain substances and parts that are harmful to human health and the environment and which must be subject to professional treatment for reuse, recycling or definitive disposal. Deliver the WEEE product to an authorised WEEE treatment centre, or contact the local organisation responsible or your nearest Marposs service centre for information. Illegal disposal of a WEEE product is a crime punishable by penalties.

**For a full list of address locations, please consult the Marposs official website: [www.marposs.com](http://www.marposs.com) - [www.testar.com](http://www.testar.com)**

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